#### Dear Reader:

The National Park Service (NPS) has prepared a Commercial Fishing Environmental Assessment (EA) for Glacier Bay National Park and is soliciting your review and comments. The NPS previously published proposed regulations, described as the preferred alternative in the EA, on commercial fishing for Glacier Bay National Park on April 16, 1997.

Because of the length of the document (about 400 pages) the NPS is not sending a copy of the EA to all individuals on the park mailing list. The NPS has developed an Executive Summary that provides a condensed version of the document. The Executive Summary includes the purpose and need for the action, a description of the five alternatives for managing commercial fishing in the marine waters of Glacier Bay National Park, a brief discussion of the affected environment and a table identifying each alternative's potential effects on park resources and commercial fishing.

A copy of the complete EA can be requested by mail or phone, if desired.

Commenting: We invite all interested individuals and groups to comment on this EA and the Proposed Rule. Your comments are important and will be assessed and considered before a final decision is made regarding commercial fishing activities in the marine waters of Glacier Bay National Park. The comment period on the EA and proposed rule will end June 1, 1998. Please send written comments by that date to:

Superintendent Glacier Bay National Park and Preserve Box 140 Gustavus, Alaska 99826

Phone: (907) 697-2230

Open houses and hearings Public open houses and hearings on the NPS proposed rule and EA, will be held in May in the following Alaskan communities: Gustavus, Hoonah, Pelican, Elfin Cove, Juneau and Sitka, and in Seattle, Washington. The open houses will provide opportunity to talk informally with park staff about the NPS proposed rule and EA. Hearings will be held following the open houses to provide opportunity for formal, recorded testimony on the proposed rule and EA. Scheduling information will be published several weeks prior to the open houses/hearings.

# **Executive Summary**

## **Commercial Fishing Environmental Assessment**

**April** 1998

### Glacier Bay National Park and Preserve





#### **EXECUTIVE SUMMARY**

#### COMMERCIAL FISHING ENVIRONMENTAL ASSESSMENT

#### INTRODUCTION

Glacier Bay National Park and Preserve is a glacier-crowned, maritime wilderness that stretches northward from Alaska's Inside Passage to the Alsek River, encircling the magnificent, saltwater Glacier Bay. The park derives its name and much of its biological and cultural significance from this great Bay, which harbors spectacular tidewater glaciers and a unique assemblage of marine and terrestrial life.

This 3.3 million-acre unit of the National Park System is one of the few protected areas in the world that includes extensive saltwater habitat within its jurisdiction. Within the boundary of Glacier Bay are over 600,000 acres of marine waters, including 53,000 acres of designated wilderness, making it the largest marine area managed by the National Park Service (NPS) (see map).

NPS regulations have prohibited commercial fishing in Glacier Bay National Park (and the predecessor national monument) since 1966, and the Wilderness Act has prohibited commercial fishing in the wilderness waters within Glacier Bay National Park since 1980. Commercial fishing activities, however, have continued in both wilderness and nonwilderness areas of the park. NPS regulations and management policies allow commercial fishing only where specifically authorized by Federal law or treaty rights.

Since 1990, several attempts have been made to resolve the commercial fishing issue through litigation, administrative rulemaking and legislation. In 1990, the Alaska Wildlife Alliance and American Wildlands filed a lawsuit challenging the NPS's failure to bar commercial fishing activities from the park. In 1994, the district court concluded that "there is no statutory ban on commercial fishing in Glacier Bay National Park, provided, however, that commercial fishing is prohibited in that portion of Glacier Bay National Park designated as wilderness area." NPS published its first proposed rule to phase out commercial fishing in the park on August 5, 1991. At the state of Alaska's request, the Department of the Interior did not issue a final rule in 1993 and agreed to

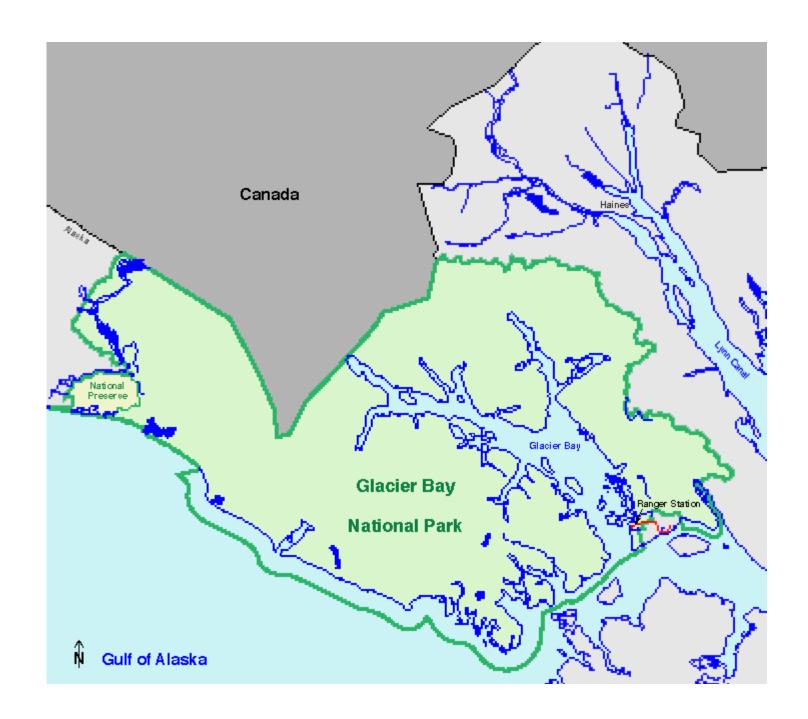
discuss with the state and Alaska congressional delegation the possibility of resolving the issue through a legislative approach. In 1992, Congress considered but did not enact proposed legislation on commercial fishing in Glacier Bay National Park. Further discussions on legislative and regulatory possibilities in 1993 and 1994 did not lead to a resolution.

In 1995 and 1996, NPS and the state of Alaska co-hosted several public meetings involving interested parties on commercial fishing in park waters. NPS developed and published a proposed rule on commercial fishing on April 16, 1997 (62 FR 18547). The environmental assessment addresses the potential environmental impact of the proposed rule and alternatives.

The proposed regulations would allow commercial fishing in nonwilderness marine waters of Glacier Bay proper to continue for 15 years. Commercial fishing would generally be authorized to continue in nonwilderness waters outside Glacier Bay proper. These fisheries would continue under a cooperative fisheries management plan developed by NPS and the state of Alaska and implemented through the Alaska Board of Fisheries, subject to the Secretary of the Interior's authority to protect park resources and values.

This action would bring Glacier Bay into conformance not only with the general policy and rules applicable to the national park system, but also with the objectives underlying the establishment of the park. In addition to resolving the legal issues, the proposed action would enhance the protection of park resources and values consistent with National Park Service law and policy. Specifically, NPS's objectives include:

- to preserve and perpetuate habitats and natural population structure and distribution of species;
- to ensure that natural, successional and evolutionary process occur unimpeded;
- to ensure that natural biological and genetic diversity is maintained;



- to minimize visitor and vessel-use conflicts;
- to protect wilderness values;
- to sustain and strengthen Hoonah Tlingit cultural ties to the park; and
- to expand our knowledge and understanding of marine ecosystems.

The NPS has continued to gather information throughout the scoping period for this environmental assessment through a series of three public workshops held in Juneau, Alaska during the past several months.

#### **DESCRIPTION OF ALTERNATIVES**

The environmental assessment describes the proposed action and four alternatives for managing commercial fishing in the marine waters of Glacier Bay National Park.

The NPS will implement the Wilderness Act's prohibition on commercial fishing in wilderness waters regardless of any decision made under this environmental assessment and rulemaking process. Closure of all wilderness waters to commercial fishing is outside the scope of this process

#### ALTERNATIVE ONE: PROPOSED ACTION

The proposed action (1997 proposed rule) would enhance protection of the park's biological resources and reduce conflicts between commercial fishing and recreation activities, while providing continued fishing opportunities in outer waters. The proposal would provide displaced fishers a reasonable opportunity to adjust their fishing activities to areas outside Glacier Bay proper, amortize their current investment in fishing vessels and gear, or in many cases, continue fishing until retirement.

Glacier Bay Proper: The proposed action would prohibit all commercial fishing in Glacier Bay proper. A 15-year limited exemption in nonwilderness waters of Glacier Bay proper would allow eligible commercial fishing to continue in this area. The exemption would be available throughout the 15 years from October 1 through April 30 (outside the primary visitoruse season). Commercial fisheries eligible for the 15-year exemption would include trolling for salmon, longlining for halibut and pot or ring

net fishing for Dungeness and Tanner crab. All other fisheries and gear types would be prohibited. Participation in the eligible fisheries would be limited to those fishers with an established history (at least 6 out of 10 years, 1987-1996) in Glacier Bay. All commercial fishing in Glacier Bay proper would terminate in 15 years.

Outer Waters: The proposed action would generally authorize commercial fishing to continue in nonwilderness waters outside Glacier Bay proper. Authorized fisheries would be limited to those species and gear types (troll for salmon, longlining for halibut and groundfish, pots and ring net fishing for Dungeness and Tanner crab and purse seining in Excursion Inlet only) that have historically occurred and have provided commercially viable fisheries. All other fisheries and gear types would be prohibited.

Dungeness crab and halibut studies and a Hoonah Tlingit cultural fishery are included in the proposed action.

#### ALTERNATIVE TWO: NO ACTION

This alternative would enforce the statutory and regulatory prohibitions regarding commercial fishing activities within the marine waters of Glacier Bay National Park. Enforcement of NPS regulations would result in the immediate cessation of all commercial fisheries in all park waters (Glacier Bay proper, Icy Strait, and outer coast waters) with no opportunity to phase out fishing through limited exemptions. The Hoonah Tlingit cultural fishery and specific research proposals would not be elements of this alternative.

#### ALTERNATIVE THREE

This alternative incorporates marine reserve concepts consistent with the objectives of the NPS Organic Act and the Alaska National Interest Lands Conservation Act (ANILCA). The alternative provides an opportunity for NPS and the state of Alaska to test the effectiveness of high-latitude marine reserves for various purposes. Scientific information would be emphasized in the management and protection of resources throughout the park. Specifically, this alternative would focus on protecting those species for which the park could serve as an effective marine reserve (*i.e.*, resident species) while allowing continued harvest of species that

are subject to harvest outside park waters (*i.e.*, transient species).

Glacier Bay Proper: Alternative Three would authorize winter trolling for king salmon in nonwilderness waters of Glacier Bay proper. Commercial fishing for king salmon would be limited to the winter season (currently October 11 through-April 14). A 7-year exemption would be offered for the Tanner crab fishery and a 5-year exemption would be offered for the Dungeness crab fishery. These fisheries would terminate at the end of their respective exemption periods. All other commercial fisheries would be prohibited

Outer Waters: Alternative Three would authorize commercial fishing for salmon, halibut and Tanner crab in nonwilderness waters outside Glacier Bay proper. Commercial fishing for Pacific cod would be authorized only in Icy Strait.

Dungeness crab and halibut studies and a Hoonah Tlingit cultural fishery are included in this alternative.

### ALTERNATIVE FOUR: CONTINUED FISHING

The objective of Alternative Four would be to allow holders of valid permits to continue commercial fishing throughout Glacier Bay National Park. This alternative would prohibit only those fisheries that cannot be sustained or that cause unacceptable habitat degradation.

Glacier Bay Proper: Alternative Four would authorize most current fisheries in Glacier Bay proper and park outer waters to continue. Authorized commercial fisheries would include trolling for all species of salmon, longlining for halibut and groundfish; and pot or ring net fishing for Dungeness, Tanner and king crab.

Outer Waters: Alternative Four would authorize current fisheries in the outer waters. Authorized commercial fisheries would include trolling for all species of salmon; purse seining for salmon (Excursion Inlet only); longlining for halibut and groundfish; dingle bar fishing for ling cod; pot or ring net fishing for Dungeness, Tanner and king crab; pot fishing for shrimp; and dredging for scallops.

A Dungeness crab study and a Hoonah Tlingit cultural fishery are included in this alternative.

### ALTERNATIVE FIVE: 1991 DRAFT REGULATIONS

This alternative would enhance the protection of park resources in accordance with the NPS Organic Act and its amendments and protect wilderness values as mandated by the Wilderness Act. Conserving the marine ecosystem of Glacier Bay in an unimpaired state would protect an ecological model against which marine related activities in other areas may be measured.

Glacier Bay and Outer Waters: Alternative Five would prohibit all commercial fishing activities in Glacier Bay National Park. The NPS would offer a 7-year exemption to the systemwide prohibition on commercial fishing, allowing continued commercial fishing in nonwilderness waters by traditional methods

Authorized commercial fisheries would include trolling for salmon; purse seining for salmon (Excursion Inlet only); longlining for halibut; and pot or ring net fishing for Dungeness, Tanner and king crab. All other fisheries would be prohibited.

During the 7-year period, the NPS would continue and initiate studies and research regarding fisheries in Glacier Bay National Park and the relationship of those fisheries to marine and terrestrial ecosystems preserved in the park, the scientific values of ecosystems and resources preserved in the park, including visitor enjoyment.

A Hoonah Tlingit cultural fishery would not be initiated in this alternative.

#### AFFECTED ENVIRONMENT

Glacier Bay proper opens to the north off Icy Strait and branches for more that 60 miles through increasingly deforested mountains to terminate in bare rock and glacial ice. Glacier Bay proper, the heart of the present park, was hidden under a vast ice sheet as recently as 200 years ago. A century ago the American naturalist and writer John Muir found the glaciers had receded more than 30 miles and began documenting one of the most rapid glacial retreats ever recorded. Tlingit oral history and subsequent investigation have established that the Bay had previously been ice-free and home

to numerous Tlingit people who had inhabited it between periodic glacial advances for thousands of years. The successional processes offer unparalleled opportunity for scientific study, a fact recognized in Glacier Bay's establishment as a national monument in 1925.

The national park and preserve, expanded to its current boundaries in 1980, encompasses an extensive and diverse north Pacific coastal biome. The sheltered waters of Glacier Bay ebb and flow with the region's huge tides, while ocean waves pound the beaches of the wild and remote gulf coast. Between the Bay and the coast, the lofty, snow-clad peaks of the Fairweather Range spawn the park's largest glaciers. The mountains that surround the Bay descend into newly deglaciated foothills and outwash plains, rapidly turning green as the ice age retreats. A mature spruce and hemlock forest blankets the shorelines and creeps up the slopes of the lower Bay. New islands emerge from the waters as the weight of the glaciers lifts from the earth's mantle, and beaches continue to rise and expand.

Marine waters make up nearly one-fifth of the park; and with no point of parkland more than 30 miles from the coast, the terrestrial and marine environments are closely intertwined. The combination of large seasonal runoff and tidal turbulence generates an upwelling of nutrient-rich waters, forming the basis for a productivity that resonates through the entire ecosystem. Stimulated by long hours of sunlight, phenomenal phytoplankton blooms nurture krill and other invertebrates. These food sources are exploited by a variety of animal life, both terrestrial and aquatic, and account for much of the biodiversity in the park.

More than 200 species of fish swim in park waters, including all five species of Pacific salmon; Dungeness, king and Tanner crab; as well as clams, scallops and shrimp. Intertidal communities include barnacles, mussels, seastars, urchins, sea cucumbers, sea anemones and a variety of crabs, worms, snails, chitons and seaweeds. The intertidal zone is a significant feeding and refuge area for commercially valuable marine species and an important nursery area for others. Many fishes are associated with subtidal benthic communities; and several sustain important fisheries such as Pacific halibut, rockfish, lingcod, Pacific cod, sablefish and pollock. Small schooling fishes in the pelagic zone

include capelin, sandlance, herring, juvenile walleye pollock, juvenile salmonids and myctophids (lanternfish).

The productivity of these waters is funneled up the food chain by these aquatic prey, making Glacier Bay an important foraging ground for marine mammals. Several cetacean and pinniped species feed extensively in the Bay, including the endangered humpback whale and the threatened Steller sea lion. Thousands of harbor seals breed and nurture their pups on the floating ice in Johns Hopkins Inlet and the reefs of the Beardslee Islands.

About 220 bird species or nearly 25% of the total number of species in all of North America have been recorded in the park. The shallow waters and gently sloping beaches of the Beardslee Islands, for instance, are important foraging and breeding areas for shorebirds and waterfowl and a migratory stopover for many species, as well.

Many land mammals and birds use some component of the marine environment, and the ocean tides are the pulse of the entire ecosystem. The waters and nearly 1,200 miles of shoreline are also the main avenue for visitors to explore the park and the zone where most contact between humans and the park's many creatures occurs.

Several adjacent communities are integrally linked to the Glacier Bay/Icy Strait area including Gustavus (directly adjacent to the park), Hoonah, Elfin Cove, Pelican and Excursion Inlet. These communities depend – to varying degrees - on various aspects of Glacier Bay National Park. Individuals in each community derive economic return from the park – either directly as park employees, concession employees, commercial fishers, charter operators or backcountry guides or indirectly through associated employment related to fishing or tourism.

More than 336,000 people visited Glacier Bay National Park in 1997, choosing among several methods to explore the park's many attractions. The majority enter Glacier Bay on cruise ships or tour boat excursions. During the visitor use season, all vessels (except commercial fishing vessels) enter the Bay under a permit system, which was initiated in 1983 as part of vessel regulations designed to protect the endangered humpback whale.

### ENVIRONMENTAL CONSEQUENCES

The environmental effects of the proposed action and four alternatives are summarized in Table I. While the summaries display the effects of implementing the statutory prohibition on commercial fishing in wilderness waters, these effects are not the result of the proposed action or alternatives.

Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative 1 (Proposed Action)	Alternative. 2 (No Action)	Alternative 3	Alternative 4 (Continued Fishing)	Alternative 5 (1991 Draft Regulations)
	I .	COMMERCIAL FISHERIES		
<ul> <li>Wilderness</li> <li>All fishers would be displaced from wilderness waters except &lt;7 Dungeness crabbers under the 5-7 yr. study in the Beardslee Island wilderness, who would harvest an estimated 86-130 thousand lbs/yr.</li> <li>Harvest of 86-130 thousand lbs./yr. Dungeness crab and small but unquantified harvest of King crab, Tanner crab, shrimp, salmon, halibut and groundfish would cease</li> </ul>	Wilderness  All fishers would be displaced from wilderness waters.  Harvest of 86-130 thousand lbs./yr. Dungeness crab and small but unquantified harvest of King crab, Tanner crab, shrimp, salmon, halibut and groundfish would cease.	Wilderness     All fishers would be displaced from wilderness waters; except some Dungeness crabbers under the 5-7 yr. study in Beardslee Island wilderness.     Harvest of 86-130 thousand lbs./yr. Dungeness crab and small but unquantified harvest of King crab, Tanner crab, shrimp, salmon, halibut and groundfish would cease.	Wilderness  All fishers would be displaced from wilderness waters; except some Dungeness crabbers under the 5-7 yr. study in Beardslee Island wilderness.  Harvest of 86-130 thousand lbs./yr. Dungeness crab and small but unquantified harvest of King crab, Tanner crab, shrimp, salmon, halibut and groundfish would cease.	Wilderness  All fishers would be displaced from wilderness waters.  Harvest of 86-130 thousand lbs./yr. Dungeness crab and small but unquantified harvest of King crab, Tanner crab, shrimp, salmon, halibut and groundfish would cease.
Bay Proper - during 15 yr. exemption  Qualifying tanner crabbers reduced, yet harvest would continue of 166-328 thousand lbs./yr.  Up to 4 King crabbers displaced and 200-2,000 lb/yr. harvest would cease.  Up to 4 Dungeness crabbers displaced from Bartlett Cove for 5-7yr study, and harvest of 32-48 thousand lbs/yr. would continue in Bay proper.  Small number of summer salmon trollers displaced and small summer harvest would cease; winter King salmon troll and harvest would continue.  Qualifying halibut fishers reduced and would achieve quota share harvest in lower bay over shorter season; 188-328 thousand lbs/yr. harvest would be reduced.  74 groundfish fishers displaced and harvest of 2-6 thousand lbs/yr. would cease.  Bay Proper - after 15 yr. exemption  All fishers would cease for Tanner crab, Dungeness crab, King salmon and halibut.	<ul> <li>Bay Proper</li> <li>14-25 Tanner crabbers, 4 King crabbers, and 8-13 Dungeness crabbers would be displaced, and harvest would cease for 166-328 thousand lbs./yr. Tanner crab, 200-2,000 thousand lbs./yr. King crab, and 32-48 thousand lbs./yr. Dungeness crab.</li> <li>All salmon trollers would be displaced. Harvest of 8,000 King salmon/yr. during winter troll and small, summer harvest would cease.</li> <li>31-46 halibut vessels would be displaced and harvest of 188-328 thousand lbs./yr. would cease, quota achieved elsewhere.</li> <li>▶ 4 groundfish fishers would be displaced and harvest of 2-6 thousand lbs./yr. would cease.</li> </ul>	Bay Proper - during 7 yr. exemption  14-25 Tanner crabbers and 8-13 Dungeness crabbers would continue to harvest 166-328 thousand lbs./yr. Tanner crab and <21-32 thousand lbs./yr. Dungeness crabbers would be displaced from Bartlett Cove during 5-7 yr. study, and after study harvest would continue at 32-48 thousand lbs./yr.  Up to 4 King crabbers would be displaced and 200-2,000 lbs./yr. harvest would cease.  Some number of summer salmon trollers would be displaced and small, summer harvest would cease; winter King salmon harvest would continue.  31-46 halibut vessels would be displaced and harvest of 188-328 thousand lbs./yr. would cease, quota achieved elsewhere.  >4 Groundfisf fishers would be displaced and harvest of 2-6 thousand lbs./yr. would cease.  Bay Proper - after 7 yr. exemption  All Tanner crabbers and Dungeness crabbers would be displaced and harvest of and Dungeness crabbers would be displaced and harvest of langeness crabbers would be displaced and harvest of langeness crabbers would be displaced and harvest of langeness crabbers would be displaced and harvest would cease.	<ul> <li>Bay Proper</li> <li>14-25 Tanner crabbers, 4 King crabbers, and 8-13 Dungeness crabbers would continue to harvest 166-328 thousand lbs./yr. Tanner crab, 200-2,000 lbs./yr. King crab and 21-32 thousand lbs./yr. Dungeness crabbers would be displaced from Bartlett Cove during 5-7 yr. study, and after study harvest would continue at 32-48 thousand lbs./yr.</li> <li>◆ Winter and summer salmon trollers would continue to harvest small but unknown number of salmon.</li> <li>◆ 31-46 halibut vessels would continue to harvest 188-328 thousand lbs./yr.</li> <li>◆ 4 groundfish fishers would continue fishing and harvest 2-6 thousand lbs./yr.</li> </ul>	<ul> <li>Bay Proper - during 7 yr. exemption</li> <li>14-25 Tanner crabbers, 4 King crabbers, and 8-13 Dungeness crabbers would continue to harvest 166-328 thousand lbs./yr. Tanner crab, 200-2,000 lbs./yr. King crab, and 32-48 thousand lbs./yr. Dungeness crab.</li> <li>Winter and summer salmon trollers would continue to harvest small but unknown number of salmon.</li> <li>31-46 halibut vessels would continue to harvest 188-328 thousand lbs./yr.</li> <li>&gt;4 groundfish fishers would be displaced and harvest of 2-6 thousand lbs./yr. groundfish would cease.</li> <li>Bay Proper - after 7 yr. exemption</li> <li>All Tanner, King, and Dungeness crabbers would be displaced and harvest would cease.</li> <li>All salmon trollers would be displaced and small but unknown amount of winter and summer salmon harvest would cease.</li> <li>31-46 halibut vessels would be displaced and harvest of would cease, quota achieved elsewhere.</li> </ul>

Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative 1	Alternative. 2	Alternative 3	Alternative 4	Alternative 5
(Proposed Action)	(No Action)		(Continued Fishing)	(1991 Draft Regulations)
Outer Waters - during 15 yr. exemption  Displaced Glacier Bay proper fishers would enter all fisheries and there would be a minor increase in the number of fishers and amount of take in all fisheries.  Separate shrimp fishers and 9 scallop fishers would be displaced and harvest of 40 thousand lbs./yr. shrimp and 35 thousand lbs./yr. scallop would cease.  Outer Waters - after 15 yr. exemption Displaced Glacier Bay proper fishers would enter all fisheries.  T5-25 Tanner crabbers, 5 King crabbers, and 22-61 Dungeness crabbers would continue to harvest 148-453 thousand lbs./yr. Tanner crab, 12 thousand lbs./yr. King crab, and 22,000-1.75 million lbs./yr. Dungeness crab.  S21-714 salmon trollers would continue to take 2.8-7.6 million lbs./yr. Up to 42 Excursion Inlet seiners would continue to harvest 684 thousand lbs./yr. salmon.  362-618 halibut vessels would continue to harvest 2.9-4.1 million lbs./yr. Up to 77 groundfish fishers would continue to harvest 89-339 thousand lbs./yr.	<ul> <li>Outer Waters</li> <li>Displaced Tanner crabbers (18-31) King crabbers (&lt;5) and Dungeness crabbers (17-52) would enter Icy Strait fishery outside park and competition would increase. Harvest would cease in outer coast waters for 4-24 thousand lbs./yr. Tanner crab, and 102,000-1.5 million lbs./yr. Dungeness crab.</li> <li>Up to 5 shrimp and 9 scallop fishers would be displaced, and harvest of 20 thousand lbs./yr. shrimp and 35 thousand lbs./yr. scallop would cease.</li> <li>179-277 salmon trollers would be displaced and harvest of 573,000-1.5 million lbs./yr. would cease along outer coast.</li> <li>Up to 42 Excursion Inlet seine fishers would be displaced, and harvest of up to 684 thousand lbs./yr. would continue in state waters outside park.</li> <li>125-273 halibut vessels would be displaced, and harvest of 1.7-2.5 million lbs./yr. would cease along outer coast. Number of halibut fishers and harvest would increase in Icy Strait outside park.</li> <li>Up to 29 groundfish fishers would be displaced and harvest of 7-119 thousand lbs./yr. would cease along outer coast. Number of groundfish fishers and harvest in Icy Strait outside park would increase.</li> </ul>	• 16-25 Tanner crabbers and 5 King crabbers would continue to harvest 148-453 thousand lbs./yr. Tanner crab in outer waters and up to 12,000 thousand lbs./yr. King crab in Icy Strait outside park. • 9-39 Dungeness crabbers, 5 shrimp fishers, and 9 scallop fishers would be displaced from outer coast and harvest of 102,000-1.5 million lbs./yr. Dungeness crab, 20 thousand lbs./yr. shrimp, and 35 thousand lbs./yr. scallop would cease. Some of these fishers would enter the Icy Strait fishery and competition would increase. • Small number of displaced Bay proper summer salmon trollers and halibut fishers would enter fishery, but overall number of fishers and harvest levels would continue comparable to past efforts. • Up to 42 Excursion Inlet seiners would be displaced and harvest of 685 thousand lbs./yr. would cease. • Up to 48 groundfish fishers would be displaced and harvest of 7-119 thousand lbs./yr. in park waters would cease. Groundfish harvest in Icy Strait outside park waters would increase 8-13 thousand lbs./yr. due to displaced fishers entering fishery.	• 16-25 Tanner crabbers, 5 King crabbers, and 22-61 Dungeness crabbers would continue to harvest 148-453 thousand lbs./yr. Tanner crab, 10 thousand lbs./yr. King crab, and 222,000 to 1.75 million lbs./yr. Dungeness crab.  • Up to 6 shrimp fishers and 9 scallop fishers would continue to harvest up to 40 thousand lbs./yr. of shrimp and 35 thousand lbs./yr. scallops.  • 521-714 salmon trollers and 42 Excursion Inlets seiners would continue to harvest 2.8-7.6 million lbs./yr. and 684 thousand lbs./yr. respectively of salmon.  • 362-618 halibut vessels would continue to harvest 3-4.1 million lbs./yr. including Icy Strait.  • Up to 77 groundfish fishers would continue to harvest 49-339 thousand lbs./yr.	Outer Waters - during 7 yr. exemption  • 16-25 Tanner crabbers, 5 King crabbers, and 22-61 Dungeness crabbers would continue to harvest 148-453 thousand lbs./yr. Tanner crabs, 10 thousand lbs./yr. King crab, and 222,000-1.75 million lbs./yr. of Dungeness crab.  • Up to 5 shrimp fishers would be displaced and harvest of shrimp and <35 thousand lbs./yr. scallop would cease.  • 521-714 salmon trollers and up to 42 Excursion Inlet seiners would continue to harvest 2.8-7.6-1.5 million lbs./yr. and 684 thousand lbs./yr., respectively of salmon.  • 125-273 halibut vessels would continue fishing and harvest of 3-4.1 million lbs./yr.  • Up to 29 groundfish fishers would be displaced and harvest of 7-119 thousand lbs./yr. along outer coast would cease; displaced fishers would enter Icy Strait fishery outside park waters and harvest would increase by 8-13 thousand lbs./yr.  Outer Waters - after 7 yr. exemption  • 2-3 Tanner crabbers, 5 King crabbers, and 8-13 Dungeness crabbers would be displaced and harvest would cease.  Displaced crabbers would enter Icy Srait fishery outside park and competition would increase.  • 179-227 salmon trollers and 42 Excursion Inlet seiners would be displaced and harvest of 573,000-2.1 million lbs./yr. salmon would cease.  • 125-273 halibut vessels would be displaced and harvest of 1.7-2.5 million lbs./yr. of halibut outside park waters would increase. Icy Strait harvest of halibut outside park waters would increase 188-328 thousand lbs./yr.

FISHERIES REVENUE

During the phase-out period, the estimated revenue reductions for Alternative 1 (\$.4 M), Alternative 4 (\$.1 M) and Alternative 5 (\$.43 M) would be extremely small, in comparison to the \$3.5 M effect of the no-action alternative. For alternatives estimated to produce only minor reductions in revenues, reductions in and redistributions of income and well-being could be expected. Alternative 3 would reduce revenues by \$1.35 M.

In the post-transition era, Alternative 4 (\$.2 M) would have the least effect on revenues. Alternative 1 is the second least limiting in terms of revenues and would be projected to reduce fishery revenues annually by \$1.8 M. Alternative 3 would reduce fisheries revenues by \$2.35 M annually while Alternatives 2 and 5 would reduce annual revenues by \$3.5 M and \$3.3 M, respectively.

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Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative 1	Alternative. 2	Alternative 3	Alternative 4	Alternative 5
(Proposed Action)	(No Action)		(Continued Fishing)	(1991 Draft Regulations)
T	СОММЕ	RCIALLY HARVESTED MARIN	NE SPECIES	
Tanner Crab  During 15-year phase-out  Completely protected from commercial harvest in wilderness waters; harvest continues in Bay proper and non-wilderness outer waters.  After 15-year phase-out  Completely protected from commercial harvest in Bay proper; harvest continues in non-wilderness outer waters.	Completely protected from commercial harvest in all park waters.	Completely protected from commercial harvest immediately in wilderness waters and after 7 years in Bay proper; present harvest continues in non-wilderness outer waters.	Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.	During 7-year phase-out  Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.  After 7-year phase-out  Completely protected from commercial harvest in all park waters.
King Crab			<u> </u>	
Completely protected from commercial harvest in all park waters.	Completely protected from commercial harvest in all park waters.	Completely protected from commercial harvest in all park waters.	Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.	During 7-year phase-out Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.  After 7-year phase-out Completely protected from commercial harvest in all park waters.
Dungeness Crab				commercial harvest in an park waters.
During 15-year phase-out  Completely protected from commercial harvest in wilderness waters (except for 5-7 year research project in portion of Beardslee Islands); protected during visitor-use season in Bay proper (except year-round in Bartlett Cove for 5-7 yrs.).	Completely protected from commercial harvest in all park waters.	Completely protected from commercial harvest immediately in wilderness waters, Bartlett Cove and outer waters, and after 5 years in Bay proper.	Completely protected from commercial harvest in wilderness waters (except for 5-7 year research project in portion of Beardslee Islands); present harvest continues in non-wilderness waters (except for 5-7 yr. research project in Bartlett Cove).	During 7-year phase-out  Completely protected from commercial harvest in wilderness waters.  After 7-year phase-out  Completely protected from commercial harvest in all park waters.
• After 15-year phase-out Completely protected from commercial harvest in Bay proper; harvest continues in non-wilderness outer waters.				
Shrimp and Weathervane Scallops	- Committee and the discount	Commission material from	- Completely material from a con-	Commission was a different
Completely protected from commercial harvest in all Park waters.	Completely protected from commercial harvest in all Park waters.	Completely protected from commercial harvest in all park waters.	Completely protected from commercial harvest in Bay proper; present harvest continues in non-wilderness outer waters.	Completely protected from commercial harvest in all park waters.

Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative 1	Alternative. 2	Alternative 3	Alternative 4	Alternative 5
(Proposed Action)	(No Action)		(Continued Fishing)	(1991 Draft Regulations)
Pacific Salmon				
• Completely protected from commercial harvest in wilderness waters and in Bay proper during visitor-use season; harvest continues outside visitor-use season and in non-wilderness outer waters.  • Completely protected from commercial harvest in Bay proper; harvest continues in non-wilderness outer waters.	Completely protected from commercial harvest in all Park waters.	Completely protected from commercial harvest in wilderness waters and Bay proper (except winter trolling for kings continues in Bay proper); troll harvest continues in non-wilderness outer waters; NPS requests ADFG close Excursion Inlet purse seine fishery.	Completely protected from commercial harvest in wilderness waters; present harvest continues in non-wilderness waters.	During 7-year phase-out Completely protected from commercial harvest in wilderness waters.  After 7-year phase-out Completely protected from commercial harvest in all park waters.
Pacific halibut				
• Completely protected from commercial harvest in wilderness waters and in Bay proper during visitor-use season; harvest continues outside visitor use-season and in non-wilderness outer waters.  **After 15-year phase-out** • Completely protected from commercial harvest in Bay proper; harvest continues in non-wilderness outer waters.	Completely protected from commercial harvest in all Park waters.	Completely protected from commercial harvest in wilderness waters and Bay proper; present harvest continues in non-wilderness outer waters.	Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.	During 7-year phase-out  Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.  After 7-year phase-out Completely protected from commercial harvest in all park waters.
Groundfish				
During 15-year phase-out  • Completely protected from directed fisheries in wilderness waters and Bay proper; incidental catch from halibut long-lining continues; present harvest continues in outer waters except lingcod dinglebar.	Completely protected from commercial harvest in all Park waters.	Completely protected from commercial harvest in wilderness waters and Bay proper; rockfish and lingcod protected from directed fisheries in outer waters, present pacific cod harvest continues; incidental catch from halibut long- lining continues in outer waters.	Completely protected from commercial harvest in wilderness waters; present harvest continues in all non-wilderness waters.	Completely protected from directed commercial fishery harvest in all park waters; incidental catch from halibut long-lining continues during 7-year exemption for that fishery.
• Harvest continues in outer waters				
except lingcod dinglebar.				
		WATER QUALITY	T	
During 15-year phase-out  • Most park waters at risk of small periodic spills from fishing boats.	Effects of commercial fishing on park water quality would end.	Most park waters at minimal risk of small, periodic spills from fishing boats.	Most park waters at risk of small, periodic spills from fishing boats.	During 7•year phase-out.  • Most park waters at risk of small, periodic spills from fishing boats.
After 15-year phase-out • Glacier Bay proper waters protected; outer waters at continued risk.				• All park waters protected.

Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative. 2	Alternative 3	Alternative 4	Alternative 5
(No Action)		(Continued Fishing)	(1991 Draft Regulations)
NO	 N-COMMERCIAL MARINE SPE	CCIES	
Effects of commercial fishing on non- commercial marine species in park waters would end. Marine systems would evolve toward a more natural condition.	Some direct mortality and sublethal effect from harvest methods, pollution and habitat disturbance would continue in most park waters.	Direct mortality and sublethal effect from harvest methods, pollution and habitat disturbance would continue in most park waters.	During 7-year phase-out  Direct mortality and sublethal effect from harvest methods, pollution and habitat disturbance would continue in most park waters.
			After 7-year phase-out • Effects would end in all park waters.
THRE	ATENED AND ENDANGERED S	SPECIES	
Effects of commercial fishing on humpback whales in park waters would end.	Whales would continue to be at low-level risk of short-term behavioral disturbance, collision with fishing vessels, entanglement in or ingestion of fishing gear or debris and exposure to marine pollution in most park waters.	Whales would continue to be at low-level risk of short-term behavioral disturbance, collision with fishing vessels, entanglement in or ingestion of fishing gear or debris, and exposure to marine pollution in most park waters.	During 7-year phase-out  Whales would continue to be at low-level risk of short-term behavioral disturbance, collision with fishing vessels, entanglement in or ingestion of fishing gear or debris and exposure to marine pollution in most park waters.  After 7-year phase-out  Effects would end in all park waters.
Effects of commercial fishing on Steller sea lions in park waters would end.	Winter King salmon trolling would expose sea lions to low-level risk of short-term behavioral disturbance, vessel collision, entanglement in trolling flashers, exposure to marine pollution, and removal of prey. Other continuing fisheries would expose sea lions to some low-level risks of the above.	Sea lions would be at continued low- level risk of short-term behavioral disturbance, vessel collision, entanglement in or ingestion of fishing gear, exposure to marine pollution in most park waters and may lose availability of important food sources.	During 7-year .phase-out  • Sea lions would be at continued low-level risk of short-term behavioral disturbance, vessel collision, entanglement in or ingestion of fishing gear or exposure to marine pollution in most park waters and may lose availability of important food sources.  After 7-year phase-out  • Effects would end in all park waters.
	NOI  • Effects of commercial fishing on non- commercial marine species in park waters would end. Marine systems would evolve toward a more natural condition.  THRE.  • Effects of commercial fishing on humpback whales in park waters would end.  • Effects of commercial fishing on Steller sea lions in park waters would	NON-COMMERCIAL MARINE SPE      • Effects of commercial fishing on non-commercial marine species in park waters would end. Marine systems would evolve toward a more natural condition.  THREATENED AND ENDANGERED STANDED	Non-commercial fishing on non-commercial fishing on non-commercial marine species in park waters would end. Marine systems would evolve toward a more natural condition.  * Effects of commercial fishing on humpback whales in park waters would end.  * Effects of commercial fishing on humpback whales in park waters would end.  * Effects of commercial fishing on humpback whales in park waters would end.  * Effects of commercial fishing on humpback whales in park waters would end.  * Effects of commercial fishing on fishing gear or debris and exposure to marine pollution in most park waters.  * Effects of commercial fishing on steller sea lions in park waters would end.  * Effects of commercial fishing on steller sea lions in park waters would end.  * Winter King salmon trolling would expose sea lions to low-level risk of short-term behavioral disturbance, vessel collision, entanglement in trolling flashers, exposure to marine pollution in most park waters.  * Sea lions would be at continued low-level risk of short-term behavioral disturbance, vessel collision, entanglement in trolling would expose sea lions to low-level risk of short-term behavioral disturbance, vessel collision, entanglement in most park waters.

Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative 1	Alternative. 2	Alternative 3	Alternative 4	Alternative 5		
(Proposed Action)	(No Action)		(Continued Fishing)	(1991 Draft Regulations)		
	NON-ENDANGERED MARINE MAMMALS					
During 15-year phase-out  • Marine mammals would be at continued low-level risk of short-term behavioral disturbance, collision with fishing vessels, entanglement in or ingestion of fishing-gear or debris, exposure to marine pollution and removal of prey by commercial fishing activities in all park waters. Risks would be much reduced in Glacier Bay proper in the summer months.  After 15-year phase-out  • Effects would end in Glacier Bay proper and continue in outer waters.	Effects of commercial fishing on marine mammals in park waters would end.	Crab fishing in the Bay proper and salmon trolling, halibut and Pacific cod long-lining and Tanner crab fishing in outer waters would expose marine mammals to minimal risk of short-term behavioral disturbance, collision with fishing vessels, entanglement in or ingestion of fishing-gear and debris, exposure to marine pollution and removal of prey.	Marine mammals would continue to be at low-level risk of short-term behavioral disturbance, collision with commercial fishing vessels, entanglement in or ingestion of fishing gear and marine debris, exposure to marine pollution and removal of prey by commercial fishing activities in most park waters.	During the 7-year phase-out  Marine mammals would be exposed to low-level risk of short-term behavioral disturbance, collision with fishing vessels, entanglement in or ingestion of fishing-gear and debris, exposure to marine pollution and removal of prey by commercial fishing activities in most park waters.  After 7-year phase-out  Effects would end in all park waters.		
proper and continue in outer waters.		TERRESTRIAL MAMMALS	L			
During 15-year phase-out  Terrestrial mammals would be at minimal risk of behavioral disturbance, entanglement in and ingestion of commercial fishing gear or debris and contact with pollutants.  After 15-year phase-out  Effects would end in Glacier Bay proper and continue in outer waters.  Terrestrial systems in Glacier Bay proper would evolve toward a more natural condition.	Effects of commercial fishing on terrestrial mammals in the park would end. Terrestrial systems in Glacier Bay proper would evolve toward a more natural condition.	Terrestrial mammals would be at minimal risk of behavioral disturbance, entanglement in and ingestion of commercial fishing gear or debris and contact with pollutants. Effects would be localized.	Terrestrial mammals would be at minimal risk of behavioral disturbance, entanglement in and ingestion of commercial fishing gear or debris and contact with pollutants.	During 7-year phase-out  Terrestrial mammals would be at minimal risk of behavioral disturbance, entanglement in and ingestion of commercial fishing gear or debris and contact with pollutants.  After 7-year phase-out  Effects would end and all terrestrial systems would evolve toward a more natural condition.		
MARINE BIRDS						
During 15-year phase-out  Commercial fishing would expose marine birds to low-level risk of behavioral disturbance, entanglement in or ingestion of fishing gear or debris, and contact with pollutants. Effects would be on individuals and would not affect marine bird populations.  After 15-year phase-out  Effects would end in Glacier Bay	Effects of commercial fishing on marine birds in the park would end.	Commercial fishing would expose marine birds to minimal risk of behavioral disturbance, entanglement in or ingestion of fishing gear or debris, and contact with pollutants. Effects would be on individuals and would not affect marine bird populations.	Commercial fishing would expose marine birds to low-level risk of behavioral disturbance, entanglement in or ingestion of fishing gear or debris, and contact with pollutants. Effects would be on individuals and would not affect marine bird populations.	During 7-year phase-out  Commercial fishing would expose marine birds to low-level risk of behavioral disturbance, entanglement in or ingestion of fishing gear or debris, and contact with pollutants. Effects would be on individuals and would not affect marine bird populations.  After 7-year phase-out  Effects would end in all park waters.		

Table I. Summary of impacts of wilderness water closures and Alternatives 1, 2, 3, 4, and 5 on park resources and commercial fisheries.

Alternative 1	Alternative. 2	Alternative 3	Alternative 4	Alternative 5		
	(No Action)	7 Atternative 5	(Continued Fishing)			
(Proposed Action)	(No Action)		(Collinaed Fishing)	(1991 Draft Regulations)		
	T	WILDERNESS	<u> </u>			
• Wilderness values would be enhanced by the seasonal closure of the Bay proper. Some off-season wilderness visitors would experience impacts during fall-spring fisheries. Impacts to terrestrial wilderness would continue in outer waters and outside of the visitor use season.  **After 15-year phase-out** • Effects would end in Glacier Bay proper but would continue in terrestrial	Effects of commercial fishing on marine and terrestrial wilderness in the park would end.	Wilderness values would be enhanced by closure of many fisheries.	The wilderness character of both marine and terrestrial wilderness areas would continue to be impacted by commercial fishing in adjacent non-wilderness waters.	Wilderness values would be enhanced by the seasonal closure in the Bay proper. Some off-season wilderness visitors would experience impacts during fall-spring fisheries. Impacts to terrestrial wilderness would continue in outer waters and outside of the visitor use season.  After 7-year phase-out      Effects would end in all marine and terrestrial wilderness.		
wilderness adjacent to outer waters.						
	T	VISITOR USE/EXPERIENCE				
During 15-year phase-out  During 15-year phase-out  Disturbance of backcountry users would continue as would interactions between commercial fishing vessels and cruise ships, tour boats, charter vessels and private vessels.  After 15-year phase-out  Effects would end in Glacier Bay proper but would continue in outer waters.	Effects of commercial fishing on visitor use/experience in the park would end.	Disturbance of backcountry users in Bay proper would decrease as fisheries phased out, as would interactions between commercial fishing vessels and cruise ships, tour boats, charter vessels and private boats. Interactions between vessels and impacts to backcountry users may increase in outer waters.	Disturbance of backcountry users in the park would continue as would interactions between commercial fishing vessels and cruise ships, tour boats, charter vessels and private boats.	During 7-year phase-out  Disturbance of backcountry users would continue in the park as would interactions between commercial fishing vessels and cruise ships, tour boats, charter vessels and private boats.  After 7-year phase-out  Effects would end in all park waters.		
LOCAL COMMUNITIES						
Elfin Cove, Gustavus, Juneau, Excursion Inlet, and Sitka would not be affected.     The community of Hoonah would be noticeably affected.     The community of Pelican would be affected, but community character and social composition would not change.	The communities of Juneau, Sitka, Petersburg, Gustavus, and Excursion Inlet would be slightly affected by commercial fishing closure; the character of these cities and towns would likely not change.  Elfin Cove would be somewhat impacted.  Hoonah and Pelican would be substantially impacted by the closure of all fisheries in park waters.	Elfin Cove, Excursion Inlet, Gustavus, Juneau, Petersburg and Sitka would not be affected.      Pelican would be substantially affected if the seafood processing facility could not sustain operations.      Hoonah would be adversely affected; but the traditional character of the community would be sustained.	All Icy Strait communities would maintain their current structure and character, although some would gradually evolve toward tourist-based economies regardless of commercial fishing regulations.	Following the 7-year phase-out, this alternative would affect communities similarly to Alternative Two.		

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Alternative 1	Alternative. 2	Alternative 3	Alternative 4	Alternative 5	
(Proposed Action)	(No Action)		(Continued Fishing)	(1991 Draft Regulations)	
, ,					
		MARITIME TRADITION	,		
• The Icy Strait maritime tradition would be impacted following the 15-year phase-out by reducing the number of active fishers, eliminating Glacier Bay as a resource base, reducing fishers' connection to special places within Bay proper waters and by reducing the diversity and economic viability of the commercial fishing lifeway. Because commercial fishing would be allowed to continue in outer waters, the maritime tradition would be sustained.	The Icy Strait maritime tradition would be substantially diminished by the closure of all commercial fisheries in all park waters.	This alternative would sustain the maritime tradition, but in a much diminished form.	This alternative would sustain the Icy Strait maritime culture by permitting continued commercial fishing throughout most park waters.	Alternative would affect the Icy Strait maritime culture similarly to Alternative Two.	
TLINGIT CULTURE					
Tlingit culture would be impacted by the eventual exclusion of commercial fishers from Glacier Bay proper.  Because commercial fishing would be allowed to continue in outer waters, many Native fishers would remain economically viable.	This alternative would seriously impact Tlingit culture. Displacement of culturally important individuals in the community, reduced connection to homeland, lost cultural identity, and reduced income would weaken the fabric of Hoonah Tlingit culture.	This alternative would have mixed effects on Tlingit culture as it would allow some fisheries important to Tlingit culture to continue (particularly salmon trolling) but would close the Excursion Inlet seine fishery.	Commercial fishing would remain economically viable, an important component of Tlingit culture, and Tlingit fishers would maintain significant ties to their homeland.	Following the 7-year phase-out, this alternative would affect Tlingit culture similarly to Alternative Two.	